WHAT IS CLAIMED IS:

1. A system, comprising:

5   a node including an active device, a memory, and an interface coupled by an
                address network and a data network;

           an additional node coupled to send a coherency message to the interface in the
                node via an inter-node network, wherein the coherency message requests
10   an access right to a coherency unit;

           wherein in response to the coherency message, the interface is configured to send
                a first type of address packet on the address network if a global access
                state of the coherency unit in the node is a modified state and to send a
15   second type of address packet if the global access state is not the modified
                state;

           wherein in response to the second type of packet, the memory is configured to
                send a data packet corresponding to the coherency unit on the data
20   network, regardless of whether the memory has an ownership
                responsibility for the coherency unit.

2.   The system of claim 1, wherein the coherency message requests a read access
right to the coherency unit, wherein the first type of address packet is a proxy read-to-
25 share-modified packet and wherein the second type of address packet is a proxy memory
read packet.

3.   The system of claim 2, wherein if the active device has the ownership
responsibility for the coherency unit, the active device is configured to send a data packet

corresponding to the coherency unit to the interface via the data network in response to receipt of the proxy read-to-share-modified packet.

4.   The system of claim 3, wherein if the active device has the ownership responsibility for the coherency unit, the active device is configured to lose its ownership responsibility for the coherency unit upon receipt of the proxy read-to-share-modified packet.

5.   The system of claim 3, wherein if the active device has the ownership responsibility for the coherency unit, the active device is configured to transition an access right to the coherency unit upon sending the data packet on the data network.

6.   The system of claim 1, wherein the address network is configured to convey the first and second types of address packet from the interface to a directory in point-to-point mode.

7.   The system of claim 2, wherein the address network is configured to convey the first and second types of address packet from the interface to a plurality of devices included in the node in broadcast mode, wherein the plurality of devices include the memory and the active device.

8.   The system of claim 1, wherein the data packet sent by the memory includes an indication of the global access state of the coherency unit in the node.

9.   The system of claim 1, wherein the coherency message requests a shared access right to the coherency unit.

10.   The system of claim 1, wherein the additional node is configured to send the coherency message in response to an additional active device included within the additional node sending an address packet on an additional address network included

within the additional node, wherein the address packet requests write access to the coherency unit, wherein the coherency unit is in a shared global access state in the additional node, and wherein the node is a home node of the coherency unit.

5   11.   The system of claim 10, wherein if the coherency unit is in the shared global access state in any of the plurality of nodes other than the home node, the coherency unit is in the shared global access state in the home node and no active device and no memory subsystem included in any of the plurality of nodes has the ownership responsibility for the coherency unit.

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12.   The system of claim 11, wherein the interface is configured to send a copy of the coherency unit included in the data packet to the additional node.

13.   A node for use in a multi-node system, the node comprising:

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a plurality of devices including a memory, an active device, and an interface configured to send and receive coherency messages on an inter-node network coupling nodes in the multi-node system;

20   an address network configured to convey address packets between the plurality of devices;

a data network configured to convey data packets between the plurality of devices;

25   wherein in response to receiving a coherency message on the inter-node network requesting an access right to a coherency unit, the interface is configured to send a first type of address packet on the address network if a global access state of the coherency unit in the node is a modified state and to send a second type of address packet on the address network if the global access state of the coherency unit in the node is not the modified state;

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wherein the memory is configured to respond to receipt of the second type of address packet by sending a data packet corresponding to the coherency unit on the data network, regardless of whether the memory currently has an ownership responsibility for the coherency unit.

14. The node of claim 13, wherein the coherency message requests a read access right to the coherency unit, wherein the first type of address packet is a proxy read-to-share-modified packet and wherein the second type of address packet is a proxy memory read packet.

15. The node of claim 14, wherein if the active device is the owner of the coherency unit, the active device is configured to send data corresponding to the coherency unit to the interface in response to receipt of the proxy read-to-share-modified packet.

16. The node of claim 14, wherein if the active device is the owner of the coherency unit, the active device is configured to lose its ownership responsibility for the coherency unit upon receipt of the proxy read-to-share-modified packet.

17. The node of claim 13, wherein the interface includes a global access state cache indicating global access states of a plurality of recently accessed coherency units in the node.

18. The node of claim 17, wherein the interface is configured to check the global access state cache for the global access state of the coherency unit in the node, wherein if the global access state of the coherency unit is not included in the global access state cache, the interface is configured to request an indication of the global access state of the coherency unit from the memory.

19.   The node of claim 18, wherein the interface is configured to request the global access state of the coherency unit in the node from the memory by sending the second type of address packet to the memory.

5   20.   The node of claim 13, wherein the data packet sent by the memory includes a copy of the coherency unit.

21.   The node of claim 13, wherein the data packet sent by the memory includes an indication of the global access state of the coherency unit in the node.

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22.   The node of claim 13, wherein the address network is configured to convey the first and second types of address packet from the interface to a directory in point-to-point mode.

15   23.   The node of claim 13, wherein the address network is configured to convey the first and second types of address packet from the interface to the plurality of devices in broadcast mode.

24.   A method of operating a multi-node computer system, wherein the multi-node
20   computer system includes a node and an additional node coupled by an inter-node network, the method comprising:

an interface in the node receiving a coherency message requesting an access right to a coherency unit via the inter-node network from an additional interface
25   in the additional node;

the interface sending an address packet on an address network in the node in response to said receiving, wherein the address packet is a first type of address packet if the global access state of the coherency unit in the node

is a modified state and a second type of address packet if the global access state is not the modified state;

in response to said sending, a memory in the node providing the interface with

5   data corresponding to the coherency unit regardless of whether the memory has an ownership responsibility for the coherency unit if the address packet is the second type of address packet.

25.   The method of claim 24, wherein the coherency message requests a read access

10   right to the coherency unit, wherein the first type of address packet is a proxy read-to-share-modified packet and wherein the second type of address packet is a proxy memory read packet.

26.   The method of claim 25, further comprising an active device included in the node

15   sending data corresponding to the coherency unit to the interface in response to receipt of the proxy read-to-share-modified packet if the active device has the ownership responsibility for the coherency unit.

27.   The method of claim 25, further comprising the active device losing the

20   ownership responsibility for the coherency unit upon receipt of the proxy read-to-share-modified packet if the active device has the ownership responsibility for the coherency unit.

28.   The method of claim 27, further comprising the address network conveying the

25   first and second types of address packet from the interface to a directory in point-to-point mode.

29.   The method of claim 24, further comprising the address network conveying the first and second types of address packet in broadcast mode.

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30.   The method of claim 24, further comprising the additional node sending the coherency message in response to an additional active device included within the additional node sending an address packet on an additional address network included within the additional node, wherein the address packet requests write access to the coherency unit, wherein the coherency unit is in a shared global access state in the additional node, and wherein the node is a home node of the coherency unit.

31.   The method of claim 30, wherein if the coherency unit is in the shared global access state in any of the plurality of nodes other than the home node, the coherency unit is in the shared global access state in the home node and no active device and no memory subsystem included in any of the plurality of nodes has the ownership responsibility for the coherency unit.

32.   The method of claim 31, further comprising the interface sending a copy of the coherency unit included in the data packet to the additional node.